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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,645	10/30/2003	Talbot Albert Chubb		7790
7590	05/10/2005		EXAMINER	
Melvin L. Crane 318 South Cleveland Street Arlington, VA 22204-2038			PALABRICA, RICARDO J	
			ART UNIT	PAPER NUMBER
			3641	

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/696,645	CHUBB, TALBOT ALBERT
	Examiner Rick Palabrica	Art Unit 3641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 March 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5-20 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-4 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election of species A, C, F and reactor metal Pd, with claims 1-4 readable thereon, in his 3/9/05 response, is acknowledged.

Specification.

2. The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and as failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure.

The specification refers to the invention as being directed to "radiationless cold nuclear fusion" wherein deuterium participates in exothermic nuclear reactions in electrolytic cells with solid electrolyte. The heat energy from cold fusion reactions among the deuterons within an electrolytic cell is also known in the art as "excess heat."

As set forth more fully below, the disclosure does not contain reputable evidence that is sufficient to support any allegations or claims that the invention produces "exothermic nuclear reactions" or "excess heat", that any allegations or claims of the production of excess heat due to nuclear and/or chemical reactions are valid and reproducible, nor that the invention as disclosed is capable of operating as indicated and capable of providing the intended output.

This concept of producing nuclear reactions and excess heat by "cold fusion" was in general, publicly announced by Fleischmann and Pons (hereinafter referred to as "F and P") on March 23, 1989 (see the 3/24/89 article by D. Braaten). Applicant's invention is thus, at most, no more than a variation of the cold fusion concept or system

set forth by F and P. Applicant's variation from F and P is the use of a solid, instead of an aqueous electrolyte, in an electrochemical cell system. Granite et al. also used a solid electrolyte in an electrochemical cell but failed to observe thermal evidence supporting cold fusion.

In what follows, the Examiner is guided by the U.S. Federal Court of Appeals decision, *In re Dash*, No. 04-1145, 2004 WL 2829039 (Fed. Cir. Dec. 10, 2004). The Dash patent application discloses a method for generating heat energy using an electrolytic cell having a palladium cathode and an inert anode. The electrolyte used in the cell principally contains heavy water. Dash reported measurements of heat produced by his apparatus.

The Examiner of the Dash application rejected it on enablement and utility grounds. The Board sustained the Dash Examiner's rejection and the Court affirmed the Board's decision (see *Dash*, *3).

The Court construed the Dash claims to require the production of excess heat energy and to be directed to a method of achieving "cold fusion". The Court stated, "[g]iven the scientific community's considerable doubt regarding the utility of "cold fusion" processes, we hold that the examiner established a *prima facie* case of lack of utility and enablement." (see *Dash*, C. "Analysis").

In response to Dash's argument that the evidence that supported the Examiner's *prima facie* case is invalid because it does not concern the invention as claimed and because the documents cited are anecdotal or not peer reviewed, the Court said, that it knew of "no rule that forbids the Examiner from relying on related technology, anecdotal information, or sources that are not peer reviewed to establish inoperability." The Court further stated that "[w]hile it may be ideal for the Examiner to offer peer-reviewed data

on precisely the claimed information to establish such a case, such extreme certainty is not required." (see *Dash*, *3).

As set forth more fully below, this "cold fusion" concept of producing nuclear reactions, including energy generation (known in the art as "excess heat"), is still no more than just an unproven concept.

Subsequent to the announcement of this cold fusion concept by F and P, many laboratories have attempted to confirm the results of F and P.

The results of these attempts at confirmation were primarily negative and even of the few initial positive results, these were generally either retracted or shown to be in error by subsequent experimenters (e.g., see the article by Stipp in the Wall Street Journal and the article by Browne in The New York Times (particularly page A22)).

The general consensus by those skilled in the art and working at these various laboratories is that the assertions by F and P were based on experimental errors (e.g., see The New York Times article by Browne, Kreysa et al., Lewis et al., Hilts, Horanyi, Ohashi et al., MisKelly et al. and Chapline).

Note for example, that Kreysa et al. al on page 440 state that , "We have repeated the heat balance measurements more than 10 times and never found a significant heat excess within the accuracy limits of $\pm 5\%$." Kreysa et al. also refer to various possible sources of error, which could lead to erroneous conclusion that nuclear reactions and excess heat were produced.

Hilts states that the MIT experiments failed to produce any of the excess heat reported by the Utah group.

Lewis et al. state in the summary on page 525 that they found no evidence of excess enthalpy in their experiments and, they refer to various possible sources of error

which could lead to the erroneous conclusion that nuclear reactions and excess heat were produced (note pages 528-530).

Both Hilts and Lewis et al. indicate that in any determination of excess heat, one must determine the total amount of energy produced (as heat and chemical energy) integrated over the whole period of cell operation, versus the total energy input.

It was also the general consensus by those skilled in the art and working at these various laboratories that there is no reputable evidence of neutron, gamma ray, tritium or helium production to support the allegation or claim that nuclear reactions are taking place, nor is there any reputable evidence to support the allegation or claim of excess heat production. See for example (in addition to the above listed references) page A14 of the 7/13/89 edition of The Washington Post, Cooke, Alber et al., Faller et al, Cribier et al., Hajdas et al., Shani et al., Ziegler et al., Price et al., Schrieder et al., and pages A3 of the 3/29/90 edition of The Washington Post.

Of particular interest is page A3 of the 3/29/90 edition of The Washington Post that refers to the negative findings of a physicist who had tested Pon's own cold fusion apparatus for nuclear output (for a more complete analysis of said "negative findings", note the article by Salamon et al.). Also of interest in this respect is the Cooke reference which, on pages 4 and 5, refers to the attempts at Harwell to obtain "cold fusion" and that Fleischmann (of F and P) had requested help from Harwell in verifying the cold fusion claims. Said page 5 also indicates that data was collected in Frascatti-type (i.e. gaseous) experiments.

The last paragraph on said page 5 states:

"After three months of around-the-clock work at a cost of over a half million dollars, the project was terminated on June 15. This program is believed to be one of

the most comprehensive worldwide with as many as 30 cells operating at a time and over 100 different experiments performed. The final results of this monumental effort in the words of the official press release was, " In none of these experiments was there any evidence of fusion taking place under electrochemical conditions". It should also be added that there was no evidence of excess heat generated by any of their cells."

(Underlining added).

Applicant's specification contains assumptions and speculation as to how and in what manner, his invention will operate. However, applicant has presented no reputable factual evidence to support his assumptions and speculation regarding a reproducible, sustainable excess heat (cold fusion) and low temperature reaction reactions.

Note in this respect that the examiner (as set forth above) has presented documentary evidence that there are no operative cold fusion systems that actually produce excess heat, neutrons, or any other nuclear reaction product.

The disclosure is thus insufficient and non-enabling as to exactly what all is necessary to actually present a reproducible, sustainable excess heat (cold fusion) and low temperature nuclear reaction, and, as to what would cause such reactions to actually take place in the applicant's system.

The Applicant repeatedly refers to Iwamura et al. as evidence to show that the claimed process develops exothermic nuclear reactions (e.g. see pages 8 and 9 of the Specification). Some members of the scientific community have raised doubts regarding the nuclear process claimed by Iwamura et al. For example, Shanahan (<http://groups-beta.google.com/group/sci.physics.fusion>) has expressed, among other things, the following items regarding the Iwamura et al.'s claims:

- Reagent purities were not high enough to preclude surface contamination;
- Minimal attempts to eliminate contamination as a source were inadequate;
- Statement that they could detect 0.01 ppm Pr, if present, is an assertion, and the scientific community does not blindly accept a statement without reference.

Applicant's claimed method of generating low temperature electrolytic nuclear reactions is practiced on an apparatus of non-cold fusion art (e.g. Sugaya et al. [U.S. 6,635,162 B2]) that is identical to the applicant's. Sugaya et al. discloses a gas sensor for HC combustible gas. Applicant's claim language for his apparatus reads on Sugaya et al.'s device as follows: a) first "electrically polarized solid electrolyte layer" reads on first solid electrolyte layer 3 (see also col. 6, lines 50+); b) "metal reactor plate" reads on interior electrode 11 (see also col. 7, lines 2+); c) "second polarized solid-electrolyte layer" reads on second electrolyte layer 4,5 (see col. 6, lines 51+); d) "diffusion-impending non-metallic layer" reads on diffusion controlling page 20 (see col. 6, lines 60+).

Sugaya et al.'s apparatus operates on the same gas, i.e., deuterium, as Applicant's case. Note that hydrogen in HC combustible gas inherently contains deuterium, albeit in small amounts). Note that it is well-settled case law that identical apparatuses operated in the same manner, must produce identical results.

There is accordingly, neither an adequate description nor enabling disclosure of how and in what manner, applicant's invention is able to produce low temperature electrolytic nuclear reactions and excess heat whereas, the identical systems and methods of operation in Sugaya et al., presumably did not produce said low temperature electrolytic nuclear reactions and excess heat.

Assuming for the sake of argument that applicant's invention does function in a different manner to produce a different result from that of Sugaya et al., it can only be because applicant's invention actually contains some additional critical feature(s), component(s), etc., not found in any of said references which is necessary to enable applicant's invention to function differently from any of said references so as to be able to produce a different result.

Accordingly, the disclosure is insufficient in failing to disclose said additional critical feature(s), component(s), etc., necessary to cause applicant's invention to operatively function in a different manner to produce a result different from that of said reference.

Clearly, when an artisan or experimenter is relying on the experimental results of particular tests or experiments to establish certain facts, i.e., the production of excess heat and of low temperature nuclear reactions, it is incumbent upon the experimenter to show that the alleged experimental results of excess heat and low temperature nuclear reactions, are valid and not just the results of experimental errors or misinterpretations of experimental data (and that the alleged experimental results do not fall within the limits of experimental errors).

There is thus no reputable evidence of record to support the assumption and speculation that the invention would actually operate as indicated and produce the desired results as indicated.

It is not seen wherein the specification discloses any particular structure, etc., which is unique to the applicant's system and which would make the applicant's cold fusion system operative whereas the systems disclosed in the above referenced teachings by skilled artisans (Sugaya et al.), were not operative.

It is apparent from the specification that applicants' concept or theory involves a "cold fusion" system based on the "cold fusion" systems that came about from the work of F and P, is workable or operative, only if these systems are already operative.

However, as set forth above, the examiner has presented evidence showing that in such cold fusion systems, the claims of excess heat (as well as of other nuclear reaction products), are not reproducible or even obtainable. It consequently must follow that the claims of excess heat or nuclear reactions are not reproducible or even obtainable with applicant's invention. While applicant may have set forth theoretical concepts, it is well known in the cold fusion field that theory and reality have a habit of not coinciding. There is no evidence to indicate that the applicant has so succeeded where others have failed, in arriving at an operative cold fusion system, i.e. that he has progressed his system beyond the point of an unproven theory or concept which still requires an undue amount of experimentation to enable the artisan to make and use the inventive system for its indicated purpose. This view is also considered supported by the failure to set forth a full example of the specific parameters of an operative embodiment. One cannot rely on the skill in the art for the selection of the proper quantitative values to present an operative cold fusion system, since those in the art do not know what would be these values. See Bank v. Rauland Corp., 64 U.S.P.Q. 93; In re Corneil et al., 145 U.S.P.Q. 697.

To reiterate briefly, the Examiner has presented evidence, that neither the situation of excess "heat" nor or other, nuclear reaction products, can reasonably be expected to be reproducible or even obtainable with the present invention.

There is no reputable evidence of record that would overcome the experimental showings in the above listed references, disproving this concept of "cold fusion".

Again, there is no evidence to indicate that the applicant has so succeeded where others have failed, in arriving at an operative system that produces nuclear fusion or even "excess heat", i.e., that he has progressed his system beyond the point of an unproven theory of concept which still requires an undue amount of experimentation to enable the artisan to make and use the invention for its indicated purpose.

It is thus considered that the Examiner (for the reasons set forth above) has set forth a reasonable and sufficient basis for challenging the adequacy of the disclosure. The statute requires the applicant itself to inform, not to direct others to find out for themselves; *In re Gardner et al*, 166 U.S.P.Q. 138, *In re Scarborough*, 182 U.S.P.Q. 298. Note that the disclosure must enable a person skilled in the art to practice the invention without having to design structure not shown to be readily available in the art; *In re Hirsch*, 131 U.S.P.Q. 198.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-4 are rejected under 35 U.S.C. 101 because the claimed invention as disclosed is inoperative and therefore lacks utility.

The reasons that the inventions as disclosed is inoperative are the same as the reasons set forth in section 2 above as to why the specification is objected to and the reasons set forth in section 2 above are accordingly incorporated herein.

There is no reputable evidence of record to indicate the invention has been reduced to the point of providing in current available form, an operative cold fusion

system. The invention is not considered as meeting the requirements of 35 U.S.C. 101 as being "useful". Note in this respect, Page A14 of the 7/13/89 edition of The Washington Post which indicates that there is no convincing evidence that the "phenomena attributed to cold fusion would produce useful sources of energy".

The Applicant at best, has set forth what may be considered a concept or an object of scientific research. However, it has been held that such does not present a utility within the meaning of 35 U.S.C. 101. See *Brenner v. Manson*, 148 U.S.P.Q. 689.

Additionally, it is well established that whereas here, the utility of the claimed invention is based upon allegations that border on the incredible or allegations that would not be readily accepted by a substantial portion of the scientific community, sufficient substantiating evidence of operability must be submitted by applicant. Note *In re Houghton*, 167 U.S.P.Q. 687 (CCPA 1970); *In re Ferens*, 163 U.S.P.Q. 609 (CCPA 1969); *Puharich v. Brenner*, 162 U.S.P.Q. 136 (CA DC 1969); *In re Pottier*, 152 U.S.P.Q. 407 (CCPA 1967); *In re Ruskin*, 148 U.S.P.Q. 221 (CCPA 1966); *In re Citron*, 139 U.S.P.Q. 516 (CCPA 1963); and *In re Novak*, 134 U.S.P.Q. 335 (CCPA 1962).

Claim Rejections - 35 USC § 112

4. Claims 1-4 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The reasons that the inventions as disclosed are not enabling are the same as the reasons set forth in section 2 above as to why the specification is objected to and the reasons set forth in section 2 above are accordingly incorporated herein.

5. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims do not set forth steps in the claimed inventive process for generating heat by exothermic reaction. See MPEP 2173.05(q), which states:

Attempts to claim a process without setting forth any steps involved in the process generally raises an issue of indefiniteness under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by either one of Joshi (WO 90/13127) or Sugaya et al.

Joshi discloses an electrolytic apparatus that uses a solid electrolyte and claims to release heat energy by fusion (see Abstract and page 2, lines 26+). He shows an embodiment in Fig. 6 comprising: a) first electrically polarized solid electrolyte layer 28 (see page 15, lines 10+); b) a hydrogen absorbing cathode 24 made of palladium, said cathode having a diffusion impeding non-metallic layer such as carbon fibers - see page 11, lines 4+); c) a second polarized solid electrolyte layer 26.

Applicant discloses that his diffusion impeding layers scatters deuterium (see page 9 of the specification). The carbon atoms in the carbon fibers of Joshi's cathode also has the capability of scattering deuterium because of the low carbon mass.

As to how Sugaya et al. anticipates the claims, see Section 2 above.

7. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Joshi, who discloses a Pd cathode.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Joshi in view of McIntyre et al. (U.S. 4,279,709). Johsi discloses the Applicant's claim except for the use of CaO.

Joshi uses carbon for his pore-forming materials in the cathode of his electrolytic cell. McIntyre et al. teaches mixture of carbon and CaO can be used as pore-forming material in electrolytic cells (see col. 5, lines 43+ and col. 6, lines 36+). They teach that their invention maintains significant operating advantages over the performance of other conventional electrolytic cells

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method, as disclosed by Joshi, to use a mixture of carbon and CaO as pore-formers, to gain the advantages thereof (i.e., better operation) because such modification is no more than the substitution of one material by another well-known material in the art.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Joshi in view of Idota et al. (U.S. 6,235,427 B1). Joshi discloses the Applicant's claim except for the solid electrolyte of polyethylene oxide containing deuterided phosphoric acid.

Idota et al. teach a lithium electrolytic battery having a high capacity and long life (see col. 1, lines 1+). They also teach that an organic solid electrolyte containing a mixture of polypropylene polymer and phosphoric acid ester polymers is an effective electrolyte (see col. 15, lines 30+). The Examiner notes that the Applicant himself admits that his solid electrolyte is derived from the teaching of Biberian et al. who use hydrided version of a polyethylene oxide electrolyte in a lithium battery. Thus, the teachings used by the Examiner and the Applicant both come from references on lithium batteries.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method, as disclosed by Joshi, to include an electrolyte of polyethylene oxide containing phosphoric acid, to gain the advantages thereof (i.e., effectiveness as an electrolyte in an electrolytic process),

because such modification is no more than the substitution of one electrolyte by another well-known electrolyte within the art.

The electrolyte in the Joshi-Idota et al. combination will inherently contain deuterided phosphoric acid because of the deuterium gas that enter the electrolyte.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reference O further illustrate prior art.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 571-272-6880. The examiner can normally be reached on 6:30-5:00, Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Art Unit: 3641

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "R. Palabuca".

RJP

April 26, 2005